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St. Bartholomew's Hospital Journal,

AUGUST 14th, 1899.

"Æquam memento rebus in arduis
Servare mentem."—*Horace,* Book ii, Ode iii.

TWELVE months ago the late Professor Kanthack gave, as his mid-sessional address before the Abernethian Society, a stirring appeal for greater attention to the study of clinical pathology. On another page we publish a *verbatim* account of Dr. Klein's lecture upon "The Relation of Bacteriology to Medicine," delivered in similar circumstances last month. It is a matter of rare good fortune that we enjoy at St. Bartholomew's the teaching and reputation of one who is in the very foremost rank of bacteriologists, just as up till the calamity that befell us and medicine generally last Christmas, we enjoyed those of one of the most brilliant pathologists. So much so that we realise at once in reading any public utterance of Dr. Klein's, that we are reading the words of one who speaks with authority, and therefore brings a sense of finality with his conclusions that is very welcome.

But this sense of finality may just as likely be of the form "At present we cannot say," as "It is quite certain;" it is failure to grasp the idea that the former of these conclusions is no whit less important to the progress of science than the latter that characterises the superficial mind. We have heard of a well-known consultant who made a long journey into the country, the net result of which was to tell the patient's doctor, himself a skilled and careful man, that his view that the case was a very obscure one was quite correct. It is only a person ignorant of the ultimate value of combining intelligent forbearance with skilled observation who would find anything to jeer at in the incident. It is part of the work of the well-balanced scientific mind to exercise a restraining influence upon the impetuosities of its less cautious fellow-workers. And this influence is nowhere more needed than in the field of bacteriology, for the greater the promise of any branch of medicine, the greater the temptation to anticipate results.

The subject of the diagnosis of diphtheria by microscopic examination of the throat exudation after cultivation on a nutrient medium, is one of very great importance. It has for some time been held to be a *sine quâ non* in every suspicious case. Yet it is quite obvious from Dr. Klein's remarks that such mere examinations of the morphological characters of a bacillus, apart from inoculation experiments, are totally untrustworthy in any individual case:

> "Now there grows in the throat normally a microbe, which is related to the diphtheria bacillus like a sweet almond is related to a bitter almond. I show you here a culture from this bacillus. It is the bacillus known as Hoffmann's bacillus. It gives different results in culture, though morphologically it belongs to the same group; it does not produce any disease in the animal. Therefore, if you find that a throat bacillus gives different results under culture, and that when inoculated into the guinea-pig it does not produce disease, you have no right to regard it as the diphtheria bacillus. I will show you in succession a true diphtheria bacillus and a Hoffmann's bacillus. The latter was found in an ulceration on the udder of a cow. Remember, then, that Hoffmann's bacillus is not pathogenic."

This strikes a fatal blow at the former proud contention of some bacteriologists, that the microscope was the final

and irrevocable appeal as to the malignancy or otherwise of a faucial exudation. More than this, it throws us back to a position we ought, of course, never to have quitted, be the victories of bacteriology what they may, the position of allowing great weight to careful clinical observations. Again Dr. Klein says:

"In the case of a person who has had diphtheria and has recovered, it is your duty to see that the throat has become free from the diphtheria bacillus before allowing that patient to mingle with others. It may not be free of the bacillus for several weeks, or even months, but you are bound to keep that patient back and not allow him to mingle with others, and not to allow a child to go back to school until the diphtheria bacillus has disappeared from the throat."

Our comment upon which paragraph is the pertinent and practical inquiry, What would we do for beds in Radcliffe if this rule were strictly adhered to? For that it is not is a fact we can assert from personal experience.

Just as it is borne in upon us that the bacteriology of diphtheria is not the simple thing we might have been tempted to regard it, so with tuberculosis. Hoffmann's disturbing discovery has its parallel, though it would seem to a less important degree, in Pfeiffer's observations on the *B. pseudo-tuberculosis;* we have but taken the case of diphtheria as an instance that bears out our prefatory remarks. If in the past we have strayed beyond the limits of our facts let us confess as much; if it is essential to resort to the guinea-pig for a decisive answer to a question the microscope can no longer be held capable of giving, let us acknowledge the futility of any attempt to decide by the older method. Nor must we despair because the simpler process is proved defective. Here, as always, it is a matter of tools, and we must wait patiently for their arrival. There is hope in Napoleon's old maxim that "la carrière ouverte aux talens," so that in a few years we may find the question can be settled by a test, compared with which even the microscope is a cumbrous machine. Meantime, if the result of it all is the discovery that bacteriology, the latest and most hopeful child of medicine, grows like all her other children that grow to strength and health—slowly,—so much the better for the man that it is to be. We hold no brief for Truth, neither are we responsible for the fact that the particular branch of it we seek to study happens to be wrapped in thicker darkness than most others. But we can well afford to remember who it was that said of Art that it is long.

Uric Acid Gravel.

(The substance of a Clinical Lecture delivered by Dr. GEE, June 23rd, 1899.)

DEFINITION.—Uric acid crystals passed with the urine, *i.e.* precipitated within the body.

Healthy urine tends to throw down uric acid after it has stood some hours after emission; but if crystals form very soon after emission it is almost the same thing as if formed before emission, viz. gravel. The crystals, being usually deeply coloured with urinary pigment, are easily seen, but in pale urine the gravel is almost white, and may be easily overlooked. If the crystals are very small, the microscope is necessary to determine their nature.

Uric acid gravel is often associated with oxalate of lime crystals (oxaluria).

Both uric acid and oxalate gravel cause hæmaturia. In either case the presumption is that the crystals form in the kidney, for it is difficult to believe that they could cause hæmorrhage by passing over a mucous membrane. This, of course, is always supposing the patient has not got a stone.

Oxalic acid is related to uric acid, and is produced from uric acid by oxidation; uric acid boiled with water and peroxide of lead breaks up into oxalic acid and allantoin.

The serious thing about gravel is the liability of a patient suffering from it to stone.

Relations.—No doubt closely related to gout. If biurate of soda be precipitated into the tissues, this constitutes gout.

If uric acid be precipitated in the urine, this constitutes gravel.

But gout and gravel are not the same disease, for many gouty people never have gravel, and many people who suffer from gravel never develop gout.

People suffering from gravel sometimes have a tendency to gall-stones, obesity, and diabetes. All these are connected, perhaps, with similar antecedents, *e. g.* too much food, too little exercise.

Gravel occurs in people who are in all other respects in perfect health.

Gravel occurs at all ages.

History of Uric Acid.—Uric acid exists in the healthy body in solution only as a quadrurate. So also in healthy urine—ordinary lateritious sediment in urine is quadrurate of soda. Quadrurate of soda in presence of pure water breaks up into biurate and uric acid. In healthy urine this decomposition is prevented by the presence of other salts—chlorides, sulphates, phosphates of sodium, potassium, ammonium, calcium, magnesium, and especially dipotassic phosphate, K_2HPO_4.

There are no reasons for believing that uric acid kept in solution in the body is noxious in any way. It becomes noxious only by being precipitated as a solid—as gouty deposit, or as gravel; and then it acts mechanically as a foreign body, not chemically as a poison.

The origin of uric acid is very doubtful, and the best physiologists are very cautious in what they say upon this point. All we can say is this: the urine of birds and reptiles consists of solid quadrurates and hardly any urea. The urine of mammals and frogs consists of urea and a very little quadrurates.

Uric acid eaten by mammals seems to be converted into urea. Urea eaten by birds is converted into uric acid.

Glandular substance containing much nucleoproteid, as the thymus of the calf, when eaten, increases the quantity of uric acid in the urine.

Flesh—muscular tissue—has not this effect. It increases the urates as all albuminous (animal *or* vegetable) foods do, but in no special manner.

Fat, sugar, and starch do not increase the uric acid in urine.

Uric Acid Gravel.—The immediate causes, *i. e.* in the urine itself, are—

(i) Deficiency of salines.
(ii) Deficiency of pigment—doubtful if often a cause.
(iii) Excess of uric acid relatively to the water of the urine. There may be an absolute deficiency and yet gravel; but, of course, the probability of gravel is much greater in the former case.

The quantity of uric acid passed is very different in different people, but is pretty constant in the same person. The average in health is half a gramme, more or less, in twenty-four hours; seldom more than one gramme.

The only diseases known to increase the quantity much are—

(i) Leucæmia.
(ii) Crisis in fever (? due to associated leucocytosis).
(iii) Excessive acidity of urine—this is the commonest and the chief cause.

Treatment.—The *deficiency of salines* is easily remedied by table salt.

Excess of uric acid can only be determined by quantitative analysis. If it is suspected, the amount of food taken, and especially the amount of albuminous food, should be lessened. But in this connection I have notes of a patient who, on the "Salisbury treatment" of beef-steaks and hot water, not only reduced his corpulence, but also removed the tendency to uric acid gravel. Alcohol should be but sparingly taken; spirits and water are better than wine. The general rules of health, with regard to fresh air and exercise, should be enforced.

Excessive acidity should be corrected by seeing that a sufficient amount of water is drunk; distilled water is better than ordinary water. Aërated water is best avoided. Water is best taken in the after part of the day and before bed-time. If much is drunk on an empty stomach before meals it is apt to cause flatulent dyspepsia. Cold water is less flatulent than hot.

Find out when the patient passes the gravel—for patients do not always pass gravel all day long,—and give 10—40—60 grains of potassium citrate about that time. Roberts says the most dangerous time is two or three hours before breakfast, but this is not constant in all patients. Potassium citrate depresses the heart's action and makes it irregular in some patients. So this must be watched for. Piperazine and bitartrate of piperadin are not nearly as good as potassium citrate. Lithia is not so good as potash. Salicylate of soda is useful.

But, after all, this is treatment only of the effect, not of the cause, of the disease. What is the cause? No answer can be given, except that in many cases the patient is out of health in some manner apart from the uric acid gravel, and we must improve the state of health as much as we can. Especially the patient often suffers from what we are obliged to call by the vague name of nervous debility; in such cases a thorough rest and change of scene will do most good.

A Case of Bilateral Chylothorax following Injury.

By T. P. Legg, M.B., F.R.C.S., Senior Resident Medical Officer, Royal Free Hospital.

THE following case of injury to the chest, accompanied by rupture of the thoracic duct and accumulation of chyle in both pleural cavities, is of interest on account of the rarity of the condition.

The patient, a man aged 62, was admitted to the Royal Free Hospital, under the care of Mr. Berry, on December 8th, 1898. The history was that as he was getting out of a tram the shaft of a cab struck him on the back of the right shoulder, causing him to fall on his face, the wheel passing over him from left to right.

On admission he was unconscious and collapsed, but speedily recovered with the help of stimulants. On examination a large bruise was found on the outer side of the right hip; there was no evidence of injury to the abdominal and pelvic viscera. The second left rib was fractured near its junction with the cartilage, and above the left clavicle was a bruise. In the cervico-dorsal region there was much bruising and tenderness on pressure and on movement of the head; there was no deformity of the vertebral column. Examination of the chest revealed no evidence of injury to the heart or lungs, and there was no hæmoptysis. There was no paralysis of the limbs.

On December 10th he was much worse, had had a very restless night, and was with difficulty kept in bed. His urine had to be drawn off by catheter. His pupils were unequal, the right being the larger; both reacted readily to light.

On the 12th his breathing became very laboured, there being no movement of the chest on either side, whilst the diaphragm was acting excessively, the lower ribs being drawn inwards on inspiration. The front and sides of the left chest were absolutely dull to percussion; there were no vocal vibrations felt and no breath-sounds heard. The heart was not displaced. The abdomen was somewhat distended, but except for this nothing abnormal was detected in it. The retention of urine had passed off, and instead the patient passed his urine in frequent small amounts—about two ounces at a time. There was no incontinence of fæces, and no paralysis of the limbs. The temperature was 97·6°, and the pulse 104.

The restlessness and delirium remained a marked feature till death, which occurred on the morning of the 14th, the physical signs not changing, except that the diaphragm acted more vigorously and the abdomen became more distended.

Post-mortem.—There was a fracture of the second rib on the left side two inches from the sternum, and the second rib on the right side was fractured close to the spine. On opening the chest the left pleural cavity was found filled with four pints of thick milky fluid; in the right pleural cavity there was a pint of similar fluid. This fluid was alkaline, and had a specific gravity of 1020. Microscopically it consisted of much granular matter and globules, which appeared to be fat. On shaking with ether it cleared up completely.

The left lung was collapsed, and the right lung was emphysematous. There was no blood in the pleural cavities, and no lymph. The heart was dilated. The œsophagus and abdominal viscera were uninjured. The spinal column was fractured at the junction of the third and fourth dorsal vertebræ obliquely through the disc and upper part of the latter bone; the spinal processes were uninjured, and only the ligaments held the two portions of the column together. The cord was uninjured, and there was no hæmorrhage into its coverings. The skull and brain were normal.

The most interesting features of this case are the character of the fluid contained in the pleural cavities, and its amount. The chemical and microscopical examination leave no room to doubt that it was chyle, and that it was derived from the thoracic duct. Unfortunately the thoracic duct was not found at the post-mortem, though a prolonged search was made for it, the bruising and extravasation of blood at the root of the neck and in front of the vertebral column being great; hence the exact spot where it was torn was not determined.

Then as to the amount and the rate at which it accumulated: on December 10th there is a note that air "can be heard entering both lungs," and on the 12th there is evidence of a large collection of fluid in the left chest.

Injuries to the thoracic duct are evidently very rare. Keen, in a paper read before the Philadelphian Academy of Surgery in April, 1894, gives an account of four cases of wounds of this viscus during surgical operations on tumours of the neck. One of the cases died, and three recovered; one of the latter cases lost as much as three pints of chylous fluid per diem, and rapidly emaciated. On pressure being applied to the part from which the fluid escaped, and maintained for some days, the fluid ceased to flow, and the patient made a rapid recovery. In this same paper is quoted a case of a girl aged nine years, who was pushed violently against a window-sill, and injured at the level of the third rib; in the course of two weeks marked orthopnœa and cyanosis followed, the heart being pushed over to the left side, and the liver pushed downwards two fingers' breadth below the costal margin. The right chest was punctured in the fifth space, and a litre of fluid like milk withdrawn, which was shown to be chyle. Ten days later the dyspnœa was again so great that puncture was a second time contemplated, but was not done, as the child began to improve, and made a complete recovery. In the *Medical Record*, vol. xl, No. 5, is an account of a case under the care of Dr. Eyer, where rupture of the duct followed a severe crush of the upper part of the abdomen. In this instance the rupture occurred where the duct passes through the diaphragm.

Kirchner * states that there are, including doubtful cases, only seventeen instances of injury to the duct on record, either in the neck, chest, or abdomen. Six resulted in chylous ascites, nine in chylothorax, and in one the lymph collected under the mediastinum.

Death does not necessarily follow injury to the duct, as is evident from Keen's cases, in which the duct was wounded during surgical operations in its neighbourhood, or from external violence, as in Kirchner's case. The danger arises from the wound in the duct not being closed,—leading to (1) the escape of the chyle externally and the consequent starvation, or (2) compression of the heart and lungs from the accumulation of chyle in the pleural cavities. In the former instance the treatment would be either the direct application of pressure-forceps to the site of the escaping fluid, if this can be seen, as was done in one of Keen's cases, or plugging the wound. In the latter the treatment would be to tap the chest, which would at any rate relieve the symptoms for the time being, and to repeat the operation if necessary.

* Kirchner, 'Arch. f. klin. Chir.,' Berlin, 1885, vol. xxxii, p. 156.

The Relation of Bacteriology to Medicine.

The Mid-Sessional Lecture delivered before the Abernethian Society, St. Bartholomew's Hospital, July 6th, 1899,

By Dr. KLEIN, F.R.S.

LADIES AND GENTLEMEN,—In no branch of science has the influence of modern bacteriology been of greater importance and of more successful practical application than in the medical branch. By modern bacteriology I mean bacteriology as practised within the last twenty or twenty-five years by the use and application of exact methods, by which its teachings and its results permit of direct experimental proof. To illustrate this influence of bacteriology on the practical application of medicine, I shall in the course of this lecture mention some of the more striking results of bacteriological work; and in order to be able to do so in the space of time at my disposal, I propose to show you by a few examples—first, in what way bacteriology has altered our conception of the nature of some disease processes, and in consequence how it has modified our plan of prevention and treatment; secondly, I hope to show you how it has enabled us in many instances to make correct diagnoses; and thirdly, how it has furnished us with more reliable means by which those disease processes can be prevented or even cured.

In the first place, then, as to the conception by physicians and surgeons of the nature of some disease processes. I will mention three instances which will amply illustrate the change that bacteriology has brought about. In 1872 Dr. Sanderson (now Sir John Burdon Sanderson) and myself brought before the Pathological Society of London the results of researches—experimental researches—by which we tried to show that what is spoken of as sapræmic intoxication of wounds—that is to say, a wound goes to the bad, certain chemical products are there originated which, absorbed into the system, cause febrile changes, hæmorrhages in certain organs—we tried to show that this is an entirely different process from true or septicæmic infection, in consequence of which a living thing or microbe is introduced from the outside into the wound, where it multiplies and enters further into the circulation, and therefore, by its multiplication and by its chemical effects within the body, is creating that condition which is spoken of as blood-poisoning, generally ending fatally. Well, we tried to show by a number of experiments the distinction between the two, and that both are dependent upon bacteria. One kind of bacteria like putrefactive bacteria, which are capable outside the body of creating these chemical substances which, when introduced into the body, produce that condition of sapræmia. We also tried to show that it was another set of bacteria which are capable of multiplying within the body, and thus are capable of setting up septicæmia. Now there were present at that meeting a great many well-known physicians and surgeons, all occupying a prominent place in the profession. I will not say the great

majority, but at any rate a good many of them, "pooh-poohed" the whole thing, as if this were something which was "on our brains." I remember the words of one eminent physician that "Sanderson and Klein have got bacteria on the brain." They would not have this explanation of septicæmia being an infective process, although at that time physicians and surgeons were well aware to a considerable degree of wounds going bad and septicæmia or blood-poisoning setting in. They thought, and it was according to the conception then prevailing, that it was a condition over which we had no control—a condition which rests with the patient to a large extent. I ask you to look at the condition of things now. Why, the foundation of the surgical treatment of wounds is this idea—to exclude and prevent the entrance of outside living things that might multiply within the body and cause septicæmia. What is the result of this altered conception? You hear spoken of aseptic and antiseptic surgery, or Listerism; call it what you will, it is based always upon this idea, viz. to exclude and prevent the entrance of extraneous living things that *might be* about, which are not necessarily about, but which might be about. I remember, as a student, Professor Volkmann dreaded when he had to perform an operation; he called his hospital a charnel-house. I remember Professor Billroth of Vienna hesitating to make an operation at certain times; why, he did not know, and others did not know, but wounds were continually "going to the bad," so that even a simple amputation would lead to death. Look now at the kind of operations performed, such as ovariotomy, and what a large percentage of good results are obtained! These could not be done in former years because the idea had not been grasped that all this septicæmic infection can be prevented, be it puerperal septicæmia or surgical septicæmia; it can be prevented by the vigorous exclusion of extraneous germs.

Now let me illustrate to you the kind of septicæmia about which you will have an opportunity of reading in one of the next issues of one of the medical journals. It is one of very recent birth, and therefore I thought it might interest you to see the results of it. When introduced under the skin, a small amount of deposit, such as common sewer filth, is capable of setting up an abscess—a closed abscess. In some instances it is capable of doing more than that, namely, it can produce purulent septicæmia, purulent peritonitis, purulent pleuritis, and pericarditis. These cavities being filled with purulent products, crowds of one particular microbe can be found in the exudations. I show you in this slide a cover-glass film of the purulent matter of subcutaneous abscess produced in this way. It is an acute process, and you have pus cells with nuclei, many of the pus cells being crowded with these minute bacteria; but they are also free in the fluid. In the next slide I show you a representation of purulent matter from peritonitis; some of the cells seem ready to burst with them. These are taken with a magnification of 1000. In the next slide is a similar preparation of the pus of the pericardial cavity. In the next there is shown a beautiful preparation, brought back only to-day by Mr. Norman, showing the pus cells filled with this microbe. It is an organism which occurs in sewage, and when introduced into the living animal it produced these local abscesses, or, in addition, a general infection of the peritoneal or pericardial cavities. It can be easily isolated in cultures. A small particle of this exudation was diluted with salt solution or water, and a small trace of it was rubbed over the surface of gelatine, and the slide shows the result. You can see small translucent discs, which are here enlarged. The next slide shows the same thing under a higher magnification. You see that the colonies have a slightly thicker centre, and that they are more transparent at the margin. Early colonies, under a high magnification, are seen, composed of bacilli, some very short, some longer, even cylindrical and filamentous. If you make a preparation from the purulent effusion of the pericardium or pleura or peritoneum, and stroke it over the surface of a prepared gelatine, you get in the course of seven or eight days along the line of inoculation a broad band of translucent material, with knobs in the centre. Here is, then, an illustration of how, when filth finds entrance into a wound, it might set up all these changes which I have mentioned.

Now there is another disease of quite a different nature. When I was a student I remember a particular operation being performed. A lad came to the hospital with a contracted palm. It was due to some accident some months or years before; it was so contracted that the fingers of that hand were practically useless. The operation proposed was to cut out the cicatrix, to keep the wound open, and to allow it to heal over while the palm was kept in a flat and normal condition. The cicatrix was accordingly cut out, and a piece of wire inserted so as to keep the hand from reverting to the same position during healing. The lad got tetanus and died. Well, that was due, it was said, to the severe inflammation set up in the nerve sheaths. It was not the prevailing view then that tetanus or lock-jaw was an infectious disease, but we know it now to be so. It is due to a particular bacillus which lives in manure and soil, and any material which has been so polluted entering a wound is capable of setting up this condition of tetanus. This tetanus bacillus has been isolated and studied in all its cultural characters and physiological functions. Here I show you cylindrical rods with peculiar terminal spores, and these spores are not easily affected either by heat or by chemical reagents. These are the organisms which, when they find entrance into a wound, set up the disease known as lock-jaw. The tetanus bacilli are capable of elaborating a chemical poison, which, absorbed into the system, sets up the whole train of symptoms which characterise lock-jaw. It is not found in the tissues affected, but it remains growing and multiplying, and producing these chemical products at the seat of the wound. If you examine them more carefully with particular stainings you can see that they possess numbers of flagella, as your late teacher, Dr. Kanthack, conclusively proved. The microbe is very easily recognised in cultures kept anaërobically (it does not grow when exposed to the air). When it grows in the depths of grape-sugar gelatine it produces a very characteristic growth in the track of the needle, the growth appearing as a whitish filamentous mass, and the gelatine containing it becomes slowly liquefied. Now what I want to show you is that tetanus is an infectious disease, and when it appears it is due to the introduction of the spores of tetanus bacillus into wounds, and is not caused in any other way; and if these spores are found in the wound, it can at once be settled that the case is one of tetanus. Quite recently your teacher of pathology, Dr. Andrewes, showed the practical application of this truth. In the north of Scotland there occurred in certain jute factories several cases of fatal tetanus, and one of the factory inspectors of the Home Office inquired into the matter, and found that these fatal cases of lock-jaw that occurred were associated with wounds caused by accidents at a particular machine. The inspector took some of the dust from underneath the machine or about the machine, and brought it to Dr. Andrewes. Dr. Andrewes inoculated that dust, or a small quantity of it, into mice subcutaneously. I may say that the mouse is very susceptible to tetanus, for only a small particle of the material which contains the spores of tetanus introduced into that animal produces very typical symptoms of tetanus. He inoculated this mouse with dust from the jute factory then, and the mouse died from tetanus, showing all the symptoms of that disease, and in the wound which he created by the inoculation he found this tetanus bacillus and its spores. You see our present conception of tetanus enables us to say that what we have to do is to be careful about this dust. I have not time to enter further into that now.

There is a third case I want to mention to you, and that is tuberculosis. Formerly you were taught that tuberculosis, pulmonary tuberculosis, or consumption, as it was known in the early sixties, is a disease due to some weakness of the lung, weakness transmitted from the parents to the children. That if you have this weakness given, such a person is liable to become tuberculous. Well, what causes tuberculosis? That is another matter. Vitiated air, living in closed rooms, bad food; all these have been brought forward as contributing towards the production in these weak-lunged individuals of the disease consumption. Villemin then showed by direct experiment that this process of tuberculosis, not only of the lungs but of all the viscera, can be produced artificially, in guinea-pigs particularly, by injection subcutaneously or by feeding with tubercular matter,—that is to say, with the matter derived from the lungs of a tubercular person. As you can readily imagine, that created amongst pathologists a very considerable sensation, because it was the first time that it was shown that tuberculosis is inoculable, and that therefore it must be an infectious disease. Then Salamonsen and Cohnheim showed that if tubercular matter is introduced into the anterior chamber of the eye of, say, a rabbit, which is very suitable to these experiments, it always, after a week or two, sets up a particular disease. A crop of small tubercles appeared on the iris, which gradually became more numerous, and led later on to general tuberculosis in all the viscera. Therefore they formulated the axiom that all matter which is capable of producing this iris-tuberculosis must be of tubercular derivation, for only the matter derived from previously tuberculous persons is capable of setting up this iris-tuberculosis in the rabbit. Further, you know of the great and startling discovery published by Koch, that the whole process is due to a specific bacillus, the *Bacillus tuberculosis*, about which everybody knows now; it is a definite species of microbe which is found present in these tubercles, be they tubercles of the mesenteric glands, or the spleen, or the liver, or the

lymphatic glands. If this material be cultivated artificially, as it can be, and then used, if you like in the smallest amount, by being injected into animals, tuberculosis is produced, and the tubercles so produced contain the same tubercle bacilli. When Koch had thus completed, from A to Z, the proof that it is this tubercle bacillus which is the cause of the disease tuberculosis, our conception of tuberculosis underwent a complete alteration. Now we say that tuberculosis is an infectious disease; the sputum of tubercular patients teems with tubercle bacilli; therefore guard the sputum, prevent it from having access to other persons. We know there is a disease in cattle, very characteristic pathologically, in the lungs and pleura and diaphragm particularly, called "the grapes," because they are tuberculous masses on stalks which resemble to a certain extent the appearance of the fruit. That is tuberculosis, because the caseous deposits contain this tubercular bacillus in abundance, and the matter from these masses is capable, on inoculation or ingestion, of producing general tuberculosis. Now a tubercular cow is sometimes tuberculous in the udder, and in such a case the milk contains tubercle bacilli, and it is capable of setting up tuberculosis. If the milk of such a cow be drunk, the tubercle bacilli will find their way into the alimentary canal, and then you have the disease produced known as tabes mesenterica in children, which consists of tubercular deposits in the Peyer's patches and mesenteric gland, and from the mesenteric glands they spread to other viscera. Therefore beware of the sputum of tubercular patients, beware of tubercular milk; and here you have the essence of the way to prevent tuberculosis from spreading. This is entirely due to our altered conception of tuberculosis as an infectious disease. I remember very vividly the late Sir Andrew Clarke asking me, "Do you seriously mean to say that you can recognise tubercle under the microscope?" I said, "Not only I, but my laboratory assistant can do so. Anybody can do it easily. You know that this can be done by a particular mode of staining." Sir Andrew said, and so did others, "After our working hard for years to try to recognise the early stages of tuberculosis, do you mean to say that this labour of ours is comparatively futile, and that you can tell whether a case is tuberculosis or not by simply staining the sputum, and looking at it through the microscope?" I said, "We do more than that, we not only look at it under the microscope, but we test its effect on the animal, and if the matter produces tuberculosis in the animal we say tuberculosis was the original disease." But you have to be careful. Not everything that stains like the tubercle bacillus is necessarily the tubercle bacillus. It is known that there are other kinds of bacilli which have this peculiar character, which we term acid-firm. For instance, it is shared by the leprosy bacillus. When you stain tubercle and leprosy bacilli once with hot fuchsin the stain is retained even after washing in 33 per cent. nitric acid, and in this respect they are unlike many of the common bacteria. They retain it even after being dipped in strong nitric acid, 33 per cent. strength. But if we inoculate the tubercle bacillus subcutaneously we find the lymph glands swell, and in a week or two there are caseous deposits; these extend to further lymph glands, and ultimately reach the abdominal viscera and thoracic viscera, where similar firm nodules appear, and these become necrotic and caseous. In all these deposits you find the same tubercle bacillus. But be careful, because I shall show you presently a series of slides which will show you a similar series of events in the animal produced by a different means. It has been noted that rodents—rabbits and guinea-pigs—sometimes show in their viscera nodular deposits which caseate, which become necrotic, but which are not tubercle and not associated with tubercle bacillus at all. Therefore these deposits were called pseudo-tuberculous. Thus it may be that many a deposit in the post-mortem room that used to be called tubercle is not really tubercle. As a matter of fact, deposits in the spleen or in the liver, or even in the lung were found which did not contain the tubercle bacillus; although a caseating process, they are due to a different organism. A. Pfeiffer was the first to isolate this organism, and he called it the *Bacillus pseudo-tuberculosis*. I have found this organism present in river water which had been polluted with sewage. I will show you a few lantern slides to illustrate these points about the *Bacillus pseudo-tuberculosis*. First of all we will look at the real tubercle bacillus; it is a film specimen from the expectoration of a case of pulmonary tuberculosis. You see these acid-firm bacilli in clumps. Next I show you a slide of a section through the lung from a case of acute miliary tuberculosis of a child. You see a large infundibulum filled with caseous matter, and there are present in either small or large groups these tubercle bacilli. The magnification is too low to show the individual bacilli. In the next slide there is a young tubercle just beginning in the alveolus of the lung; in the exudation around you have epithelioid cells, all filled with the tubercle bacilli. The next slide shows a specimen of tuberculosis of cattle; you see the noted giant-cell, a huge cell with its nuclei, and in the interior there are crowds of tubercle bacilli. In the next slide you see a similar preparation, a giant-cell with a row of nuclei in the periphery, and you notice the peculiar zone-like arrangement of the tubercle bacilli.

Next I show you the culture of the tubercle bacillus. It grows very slowly, two or three or four weeks being required for a single colony to reach this membranous appearance. Next I show you individual young colonies slightly magnified. Each spot where the tubercle bacilli were deposited on the medium becomes a colony of these tubercle bacilli. Next I show you a section through the liver of a guinea-pig which had been infected with the *Bacillus pseudo-tuberculosis* derived from a river. You see the typical tuberculous deposits, some of them already caseating and necrotic. The liver is permeated by these tubercles. Here is another slide showing the liver tissue and the bile-ducts and large vessels. Further, here is a slide representing a section through a Peyer's gland of the intestine, the infection having been brought about by feeding. The appearances here are very much the same as in true tubercles of the Peyer's gland, but the organism producing them is different in the two diseases. Next I show you an enlarged lymph gland nearest to the seat of inoculation, the tissue of it containing an abundance of this pseudo-tuberculous bacillus. Further, also, in the pancreas and omentum, full of these caseating tubercles, you find an abundance of the *Bacillus pseudo-tuberculosis*. Next I show you a preparation from a tubercular pancreas, the animal having been subcutaneously infected with the *Bacillus pseudo-tuberculosis*. The lymph cells are seen to be full of this organism. Next you see the same thing under somewhat higher magnification; you see the vessels and tissue are crowded with these bacilli. In an ordinary gelatine culture the *Bacillus pseudo-tuberculosis* grows well; in a day or two you see small, translucent, angular, patch-like colonies. When cultivated in broth it grows in a peculiar way, forming chains, as shown in this slide, from a fresh preparation. You will see that these matters are of very great importance when you come to judge of true tuberculosis.

I now come to the second part of my subject, namely, the diagnostic value of bacteriology. Here I will give you only a few instances where bacteriology has played a very important part. At one time, when a physician found a membrane on the tonsils or pharynx with much inflammation, he called it diphtheritic, or a false or pseudo-membrane of diphtheria, or diphtheria proper. When he did not find much inflammation, and only a small purulent condition, he did not call it diphtheria at all, but called it follicular tonsillitis. He distinguished also one kind of croup or exudation of the larynx from another kind. Now bacteriology has taught this, that the disease which is associated with a particular microbe—particular in its morphological as well as in its cultural respects and in its effects when introduced into animals—is always diphtheria. In former times diphtheria was a definition based on clinical facts; at present diphtheria is not defined in this way. Whether that false membrane is present in the throat or not, when you do find in an inflamed throat or on any other inflamed surface this particular organism, having these morphological, biological, and physiological characters, you may take it for granted that this is diphtheria—the infectious disease,—and you have to guard against its spread by treatment and isolation of this particular patient. In former years the spread of diphtheria in schools was attributed to a peculiar increase of virulence of a simple sore throat. Whatever that means I could not tell you, but that is what was said. This school influence on the spread of diphtheria was understood to be this, that the child that has only simply sore throat may go to school, and it was found that in that school the sore throat is communicated to other children and increases in virulence. What the school had to do with that nobody could say. The idea was that, so long as the child went to school, the sore throat became worse, and other children got diphtheria. The explanation at the present time of this school influence is this,—the first child had diphtheria from the beginning, not simple sore throat. It had the diphtheria bacillus in its throat, but it did not show itself as a clinically typical diphtheria. It over and over again happens that physicians from the country send material to be examined. They say, "Somebody might suggest, or has suggested, that it might be diphtheria. I do not believe it is; there is no sign of diphtheria in the house." An examination is made and the bacillus is found, and the disease is declared to be diphtheria. The physician accepts the verdict, but he reserves his opinion. If he does not isolate that patient for a short time, other cases are sure to follow in the same house. You have the same in hospital. The nurses will tell you their own story about it. Occasionally sore throat will break out. The larynx is examined,

and we find the same diphtheria bacillus. It is a mild form, but you may be sure that if the diphtheria bacillus is in the throat it is dangerous for others. Of course a person may not have diphtheria, but he may be moving in air infected with diphtheria; this person may harbour the diphtheria bacillus in his throat, and the disease may declare itself later on, or may be even communicated to others. In the case of a person who has had diphtheria and has recovered, it is your duty to see that the throat has become free from the diphtheria bacillus before allowing that patient to mingle with others. It may not be free of the bacillus for several weeks, or even months, but you are bound to keep that patient back and not allow him to mingle with others, and not to allow a child to go back to school until the diphtheria bacillus has disappeared from the throat.

I show you in the next slide a cover-glass film of a particle of a typical diphtheria membrane. You see it is already practically a pure culture of the diphtheria bacillus. You will notice that they are peculiar pointed bacilli, some of them typically club-shaped. Next I show you a section from a diphtheritic membrane, of which the superficial part has become necrotic; there are deeply-stained masses of bacilli to be seen all through the depth. In a surface culture the colonies of the diphtheria bacillus appear as rounded discs, with thicker yellowish centres and film margins, as shown in this slide.

Here is another slide showing you the same thing under a higher magnification. Sometimes in cultures these bacilli assume the character of clubs very conspicuously. I show you an agar culture where the bacilli show the typical segregation of their protoplasm and well-developed clubs. Still more pronounced are these "clubs" in a culture (shown in this slide) from the milk of a cow that had been infected subcutaneously with diphtheria, thus showing that the bacilli may pass out from the milk of a cow. A number of cases of epidemics of milk not due to the human subject find in this way their explanation.

The diphtheria bacillus has certain morphological and certain definite cultural characters, as has been just now stated; but in addition it has this peculiar character, that when introduced subcutaneously into the guinea-pig it sets up a definite disease, a local tumour, with hæmorrhage and death, in from thirty to forty-eight hours, and there is great congestion and hæmorrhage into the internal viscera, but generally no bacilli beyond the seat of inoculation. That is the characteristic of the disease produced in the animal; and if you are dealing with cultures or with material from the throat of a suspected case, and you can produce with these cultures this disease in the guinea pig, you are fully justified in saying it is diphtheria.

Now there grows in the throat normally a microbe, which is related to the diphtheria bacillus like a sweet almond is related to a bitter almond. I show you here a culture from this bacillus. It is the bacillus known as Hoffmann's bacillus. It gives different results in culture, though morphologically it belongs to the same group; it does not produce any disease in the animal. Therefore, if you find that a throat bacillus gives different results under culture, and that when inoculated into the guinea-pig it does not produce disease, you have no right to regard it as the diphtheria bacillus. I will show you in succession a true diphtheria bacillus and a Hoffmann's bacillus. The latter was found in an ulceration on the udder of a cow. Remember, then, that Hoffmann's bacillus is not pathogenic.

Now in your clinical studies you will occasionally find cases of diphtheritic ulcerations, not only in connection with the typically diphtheritic throats, but also in the conjunctiva, and sometimes in wounds of the skin or other parts of the body. You also do sometimes find in these situations—viz. in ulcerations of the skin—a bacillus which morphologically resembles it, but which is not the diphtheria bacillus. I show you here some slides of the pseudo-diphtheritic bacillus which was derived from smallpox crusts. This pseudo-diphtheria bacillus is spoken of as the xerosis bacillus; it is not pathogenic, and it has cultural characters by which it can be shown to be different.

I now want to say a few words about typhoid fever. You know that, no matter whether the physician can or cannot diagnose typhoid fever, the bacteriologist is capable of telling him with approximate certainty whether it is typhoid. If he finds that a certain reaction is given by the patient's blood, the reaction which is spoken of as Widal's test, he knows it to be typhoid fever. You no doubt know that in the case of typhoid fever the blood or the blood-serum is capable of agglutinating the bacilli in a typhoid culture. I will show you examples of this agglutination. The bacillus of typhoid fever is one of definite morphological, cultural, and physiological characters. I show you a slide of a section through a spleen in a typical typhoid fever case. You see groups and masses of the typhoid bacillus. A needle dipped into the spleen and smeared over gelatine gives rise to a pure culture of colonies of the bacilli. In the next slide is a young colony in which the bacilli are cylindrical. In the next slide they are flagellated. Next I show you a highly magnified single bacillus with flagella. This Widal's test that I spoke of consists in this: you take a culture or an emulsion of typhoid bacilli—a turbid broth or turbid bouillon emulsion of an agar growth. When examining such a culture or emulsion under the microscope it is seen to teem with motile bacilli. You mix the serum or the blood of the typhoid case with the above broth culture in definite proportions, say one in twenty, or one in fifty, or even more. After ten to thirty minutes the turbid fluid becomes clear, and a deposit is accumulating at the bottom. Only typhoid bacilli give this reaction. The bacilli sink down to the bottom of the tube in compact masses, leaving the fluid clear. But in cultures of *Bacillus coli*, for instance, this typhoid blood produces no such effect. If you take the typhoid culture, and you add a drop of blood from the patient who is supposed to be suffering from typhoid fever, and if the agglutinating effect be produced, you may be practically certain that it is typhoid fever you have to deal with. Here I show you such agglutination as it appears under the microscope, by which you will see that the sediment is composed of agglutinated masses of the bacilli. That diagnosis by means of agglutination is a very important matter; and I want to tell you a story in connection with this very point. An outbreak of a febrile disease occurred in the west of England, and at that time there happened to be also an influenza epidemic. The question was, is this only a spreading of the influenza, or is it something else? Is it typhoid? Well, the medical officer of health suspected it to be typhoid, and Widal's test enabled him very soon to declare it was typhoid. How did the patients get the typhoid? On inquiry it was found that these cases of typhoid were due to a particular milk supply, but only to that milk supply. Well, where did the milk come from? He traced it to a certain dairy farm. (Of course I am telling you in a few words the results of elaborate and painstaking researches.) But how did the dairy farm milk become infected? The conditions of the farm were very good, especially the water-supply; everything was in very good condition. But the medical officer happened to find out at the back of the milking sheds a little brook. It was suggested that the milkers, for one reason or another, did occasionally wash the pails with water from the brook. This brook, no doubt, had infecting matter in it. That brook was traced a quarter of a mile further up, to a point where some cottages stood near. On inquiry there it was found that there in a cottage a man had diarrhœa, as also his daughter, some time previously. By putting two and two together it appeared possible that these had been cases not of simple diarrhœa, but of typhoid fever. Allowing for the period of incubation of the disease caused in the above consumers of the incriminated milk, and comparing it with the time when the cottagers suffered from "diarrhœa," it became evident that there was a striking accord between the two events. Now it is a characteristic of Widal's test that it will not only succeed with the blood during the acute stage of typhoid fever, but also the blood of a case of typhoid after recovery. The medical officer sent me the blood of one of these cottagers who had had the diarrhœa, and Widal's test gave a positive result. Therefore the conclusion is justified that the dejecta of these cottages were the origin of the infection of the milk with typhoid. These cottages have sanitary (or insanitary) arrangements of a very primitive character. You need not go to China to see such primitive insanitary arrangements; you can in many parts in England see similar things. All filth is emptied straight into the brook, and from the brook further below water for cooking and cleansing purposes is obtained.

Next, with reference to cholera. You know the distinction between true epidemic infectious cholera, called Asiatic cholera, and the sporadic or English cholera. The two diseases are in many instances clinically not distinguishable from one another, but yet they are bacteriologically well defined. In Asiatic cholera you have a microbe—the cholera vibrio—which always responds to certain tests This does not occur in the sporadic cases, which not seldom occur in the summer and autumn months in England; and during those months—July, August, and September—I get material sent to me by the Local Government Board which is derived from a person who died very rapidly—in sixteen or seventeen hours—from all the symptoms of typical cholera, and declared by the medical attendant to be cholera. Yet bacteriological investigation shows that it is not Asiatic cholera. Of course, precautions should be at once taken against the spread of the disease, whether it is afterwards declared to be Asiatic cholera or whether it is simply the sporadic form. Asiatic cholera is capable of producing epidemics; the sporadic form does not spread. In Asiatic cholera there is the definite cholera vibrio, which has definite cultural

and morphological and physiological characters, which can be easily recognised. I remember in 1893 there occurred several cases of cholera in Grimsby and several cases in Hull, and there was great danger of its spreading. I remember the case that occurred in Rotherham. A person died very rapidly under symptoms of cholera—that is to say, in twenty hours, having had the typical symptoms of Asiatic cholera—vomiting, purging with rice-water stools, cramps, sunken face, failing voice, cold extremities, suppression of urine, collapse, and death. But that is a series of symptoms which occur also quite independently of Asiatic cholera, and are then spoken of as constituting sporadic or non-infectious cholera. At the time I referred to, the material sent to me was, after bacteriological and morphological examinations, pronounced to be material derived from a case of true or Asiatic cholera. People asked, "What, cholera? Where could it come from, and how could it have been imported?" The answer to this was, "Whatever the origin and source of the infection in this instance, this is a case of true cholera." Before two days had passed another case occurred, and then a third and fourth, and further cases happened in succession. Then it was admitted to be Asiatic cholera.

A duster at the House of Commons in Westminster was taken ill suddenly with symptoms of cholera, and died. An inquest was held, the rice-water contents of the intestines were sent to me, and after bacteriological inquiry I said, "This is true cholera." The medical and lay press of London, and I do not know what other journals, were astonished and doubtful. "Cholera?" they asked; "where could it come from?" It was, nevertheless, a case of true cholera; and several other cases occurred at that time in different parts of London. It did not spread because, it being treated as a suspicious case from the first, and the bacteriological examination showing it to be true cholera, all precautions were taken under the direction of the medical officer of the London County Council.

If you have to examine fluid rice-water stools, which, on microscopical examination, show slightly turbid, contain gelatinous mucus flakes, and if on examination in film specimens of these flakes they are seen to contain numerous curved or comma-shaped bacilli, some of them S-shaped, arranged like fish in a stream—*i. e.* one behind another (see lantern slide)—you are justified in suspecting the case to be Asiatic cholera. If you then make cultivations with a flake in a solution of 2 per cent. peptone or 1 per cent. salt, and if you find that after ten or twelve hours' incubation at 37° C. the peptone is turbid; and if to that peptone you add a few drops of pure sulphuric acid, and it produces a pink coloration—nitroso-indol or cholera red,—and you inject a small trace of this culture into the peritoneal cavity of a guinea-pig, and it dies within twenty hours or so of acute peritonitis, you may be almost certain that it is cholera. The slide which I showed you just now was from an undisputed case of cholera which occurred in Slingsby in 1893. Next I will show you a similar specimen from the cleaner in the House of Commons, which I mentioned. You will thus see that they are exactly similar. I also show you slides of the plate-culture of cholera vibrios in gelatine. The colonies are masses of bacilli in otherwise fairly clear liquefied gelatine. This slide shows a plate-culture of pure colonies of cholera vibrios in different phases of growth, some far advanced in liquefaction, others less so. There is another slide showing the growth of the microbes along a stab in gelatine made with a needle dipped into the infected matter. Next I show you a slide from a peptone culture of cholera. You see the typical curved organisms.

I must now tell you another story in illustration. In the autumn of 1893, at a time when cholera had been declared to be present in Hull and Grimsby, in Cleethorpes, and cases occurred also in Doncaster and Derby, there occurred an epidemic of true cholera near a sort of halfway public-house near Ashburn. That halfway public house was utilised by all sorts of tramps and pedlars, &c., people travelling from one large locality to another. This public-house was standing high up on the road, and its yard was rather on a slope, at the bottom of which slope was a well. Sanitary arrangements there were none to speak of, or only of a primitive and insufficient nature. As you might imagine, the above assortment of tramps could, and as a matter of fact did, pollute this well. There was a row of cottages near to the public-house, and the people of these cottages, not having a well of their own, used the public-house well. You can thus understand how an extensive outbreak of cholera occurred in these cottages, the percentage of cases being very high. There is no doubt that cholera had been imported there. Some of the water of that well I had the opportunity to examine. It was turbid, and on letting it stand there was a lot of flocculent deposit, which could be seen without magnifying power. We had no difficulty in finding the typical cholera vibrio in the flocculent deposit, both by microscopic examination as also by the culture tests. Thus it was shown that the water was the origin of this outbreak. Now when a cholera culture is introduced into the peritoneal cavity of the guinea-pig it produces a fatal peritonitis in twenty-four hours. But it is possible to so graduate the dose that you do not produce a fatal result, the animal recovering. Then if you again introduce a dose of cholera culture, not too large, you may again produce the disease, which also passes off. After having repeated these inoculations two or three times you find you can introduce into the peritoneal cavity of this animal a multiple fatal dose (that is to say, a dose which would kill several such animals freshly inoculated) without causing death. That is to say, the previous inoculations have rendered the animal immune. Well, if you test the blood of such an animal a fortnight after it has recovered from the last inoculation you will find it shows a peculiar effect on the cholera comma bacillus, and on that only. That is to say, if you have an emulsion of the cholera culture, and add to it a drop of blood from the animal, it shows agglutination just as typhoid cultures do with typhoid blood. The bacilli in the emulsion are at first uniformly distributed and motile, but after you add a drop of blood of the immunised guinea-pig the bacilli clump together, "agglutinate," and lose their motility. If you mix a drop of the cholera immunised animal's blood with a dose of cholera culture, and inject the mixture into a fresh guinea-pig, that guinea-pig does not die; the blood of the animal which had been immunised by successive injections of cholera culture has become endowed with the property of producing agglutination, and is capable of neutralising a fatal dose injected into a non-immunised animal. The immunity of this latter is called passive immunity, as distinct and different from active immunity of the animal that yielded the blood. It is the same active immunity against a second attack of a particular disease which is possessed by a patient who has passed through one attack of disease, *e.g.* scarlet fever; *i.e.* by the first attack a condition is produced in his blood which prevents him having an attack of that same disease again. The immunity in each of these instances is due to some substance being present in the blood after the attack which renders the individual safe against succeeding infection. I show you a slide of peritoneal fluid from a guinea-pig which has been infected by intra-peritoneal injection of the cholera vibrio. The animal died of peritonitis within twenty hours, and crowds of these cholera vibrios fill the peritoneal exudation.

There are other vibrios besides the cholera vibrio, and if you make an emulsion of these other vibrios, and add to them blood from a cholera immunised animal no effect results, whereas distinct agglutination is produced in cholera culture.

By producing successive attacks of the disease by sub-fatal doses, and injecting the blood of such an animal into another animal, you inject something which is germicidal, which can destroy the pathogenic germ, and it can thus prevent the growth and multiplication of the disease-producing germ. I show you a slide from a guinea-pig which has been thus immunised. If you examine microscopically the peritoneal fluid of such an immunised guinea-pig ten or fifteen or twenty minutes after the injection into its peritoneal cavity of cholera culture, you do not find any complete cholera vibrios; the microbes are granular and broken down, thus showing the germicidal action of the immunised animal's tissues which I mentioned above. But there is even more than this; the blood of the immunised animal has not only the power to destroy and kill the special microbe, but it is also capable of neutralising the poisons created by the microbe. Every pathogenic microbe has this specific chemical function, that it produces certain specific poisons or toxins, and the blood of an animal immunised against a particular disease is capable of acting as an antitoxin, as a substance which neutralises the toxin produced by the specific bacteria of that particular disease. Thus we inject into a child suffering from diphtheria some of the diphtheria antitoxin; thereby we may, and often do neutralise the diphtheria toxin circulating in its blood, and by thus neutralising the toxin the child has a chance of recovering.

Now, gentlemen, I cannot keep you any longer; I have only epitomised a large amount of the work which has been done, giving you the essential parts of it. That work, however, which I have brought before you is small as compared with what yet remains to be done. It is you, who form a portion of the band of workers in the present generation, who will have to carry on these investigations further.

A Case of Sudden Death from Hæmorrhage into the Lateral Ventricles.

By B. R. B. Truman, B.A.

THE case I am referring to is that of a young gentleman of about twenty-one years of age, who some time ago was staying in the same house as myself. He had had an attack of influenza about a month previously, and was up in town with his friends for a change. He was apparently in good health a day or two before his death, but he was liable to attacks of epistaxis from time to time. Not long before he had soaked two handkerchiefs with blood. On the day in question he went to the opera with his friends; but soon after he had taken his seat he said he felt rather "funny in the head," and would go home, and added that he would be all right when he got outside, and insisted on his friends staying to see the performance and not coming with him. This much was learnt from his friends. On that same evening, at 9.15, I heard a noise in the hall, and went out, and found him lying on his face and convulsively jerking about in a pool of lightish brown vomit. He had also passed his urine. The hall door was closed, and his latch-key was sticking in the lock outside, showing that he had just been able to walk home and open the door, and had then fallen down in a fit before he had time to remove the key, the door apparently blowing to after him. There was no odour at all in his breath. He was not able to speak or utter any sound; but when I went up and bent over him, and turned him on his back, he tried to raise himself and give me his hand. But I found it impossible to raise him, as he had no power of his own, and sank down if I relaxed my support. His face and hands were pale and clammy, and his face and the roots of his hair were damp with a profuse sweat. I got assistance, and had him taken to his room, and sent for a doctor. After getting him on to his bed and loosening his clothes, we examined him more fully, and found no external wound whatever on his head, and only a few very slight bruises on his arms and body, as the result of his fall. His jaw was clenched, and his tongue was not bitten; but there was some blood in his mouth, which had apparently oozed from the gums. His pulse was regular, moderate volume and tension, and not quick. His breathing was stertorous. His right pupil was contracted to a pin-point and fixed, and his left one was dilated fully and fixed. His convulsive movements had not ceased, but were less violent than they originally were, and his jaw became more relaxed. After a short time his pulse became very irregular, rapid, and feeble, his breathing shallower, and his movements very much less. He rallied from this, and his heart became regular again, and his pulse slower and stronger. After about ten minutes, however, he had another relapse, and his pulse again became very irregular, rapid, and feeble, and his heart-sounds could hardly be heard. His movements had by this time almost completely stopped. His breathing was very feeble and shallow, and his right pupil was dilated fully, like the left, and both were fixed. In this condition he died at about 11.20 p m. An inquest was held, and a post-mortem made on the body. On opening the skull, both lateral ventricles were found distended with blood. I was not able to see the post-mortem, but the doctor I called in told me that the kidneys were healthy, the capsules stripping off readily, and that the other organs also were quite free from disease, and said that he thought the blood in the ventricles was due to an oozing, probably of a hæmophilic origin. To support this view there was the oozing from the gums and the epistaxis that had occurred shortly before death. I was not able to ascertain whether he came of a "bleeder" family or not. A hæmophilic oozing from the choroid plexus into the lateral ventricles seems to me to best account for his death, although the only other evidences of that diathesis were the oozing from the gums and the epistaxis.

Notes.

THE Winter Session will commence on Monday, October 2nd. The Annual Dinner of Old Students will take place in the Great Hall at 6.30 p m. the same day, Dr. Thomas Lauder Brunton in the chair.

THE Opening Address of the 1899—1900 Session of the Abernethian Society will be given by Dr. Church at 8 p.m. on Thursday, October 5th, in the Anatomical Theatre. We shall be able to announce Dr. Church's subject in our September issue.

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MR. JAMES BERRY has been appointed Surgeon to the North London Hospital for Consumption and Diseases of the Chest, *vice* Mr. Watson Cheyne, resigned.

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MR. WALTER JESSOP has been appointed Honorary Surgeon-Oculist to the Royal Masonic Institution for Girls, London.

* * *

MR. T. J. HORDER has been appointed Physician to Out-patients at the Great Northern Central Hospital.

* * *

MR. E. P. PATON has been appointed Assistant Surgeon to the Westminster Hospital.

* * *

MR. P. J. CAMMIDGE has been appointed Assistant Demonstrator of Pathology to the Leeds Medical School (Victoria University).

* * *

DR. H. T. PARKER has been appointed Principal Medical Officer of Egyptian Prisons, after holding the post of Medical Inspector for a period of eighteen months.

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AN enterprising firm of manufacturing chemists has recently sent round a pamphlet on the use of eucaine as a local anæsthetic, presented with compliments to the medical profession. The first article in this present proves to be copied *verbatim et literatim* from an article published in these columns two years ago. The source of the extract is certainly stated, but we should be curious to know how far copyright in these matters extends.

* * *

WE are glad to see that the youngest of our contemporaries, the *Charing Cross Hospital Gazette*—mourned as dead by all except its fond parents, the editors—has been roused from its lengthy trance into a third number, the late issue of which is owing to "the occurrence of certain unexpected and unavoidable events." Once more all the London Medical Schools have one thing in common: a more-or-less-monthly journal. We wish our Charing Cross friends *bon voyage* with their second venture.

* * *

WE notice that an attempt (as yet abortive) has been made to amalgamate the United Sports Club, Debating Society, and Gazette at the Westminster Hospital. Since this scheme would render our contemporary, *The Broad Way*, subject to the censorship of the Dean of the School, or at least to that of a more rigid committee than at present, there is considerable resistance on the part of the Gazette, whose editors cling to the freedom of their

press with commendable pertinacity. As they put their case, "The system on which the Gazette is at present being conducted was originally drawn up by the unanimous vote of the students *and staff* at a general meeting, when the present committee was elected and given full control and management of the Gazette." It seems that two days later the Dean announced to one of the editors that he must serve upon the Committee "in order to know what copy will go into each number." This suggestion was not adopted, whereat the Dean seems to have taken refuge in threats. A second general meeting was held to "make matters quite clear," and it was unanimously decided "that the Gazette was an independent organ, under the sole control of the students, and no one but the students." Then came a pause, followed now by this amalgamation proposal, the acceptance of which would naturally be fraught with gain to the several clubs, but with undoubted limitations to the chartered libertinism of *The Broad Way*.

* * *

WHAT the outcome will be seems doubtful. Mr. Tubby is not the first tactician who has arrived on the field of action two days late and attempted to rectify his loss of time afterwards. Our own conditions of journalism, as our readers know—or ought to—are different from those of *The Broad Way*, and they are probably as near the ideal conditions for the purpose in hand as is possible. There have been times when we chafed and fretted under the guarded supervision of our Warden's censorship, but the recollection of how aptly our above-named contemporary has sometimes verified its title forces us to admit that our own system has its merits.

* * *

WE notice from the *Nursing Record* that a discussion was held on "The balance of power in hospital administration" at the Matrons' Council Conference. The subject was introduced in a very reasonable spirit by Miss Mollett, but the discussion which followed was not thus characterised throughout. A certain Miss Palmer, of Rochester, U.S.A., showed clearly that in her case any attempt at a "balance of power" had been replaced by an autocracy; she stated that her duties included the recommending of the appointment of four resident physicians. She went on to say, since the change in the administration the hospital had come out of debt, and had a surplus account for the first time in its history. (Applause.) There had been no internal friction of enough consequence to be reported. When young men applied for appointments they came to her, and she told them they must make up their minds to be subordinate to a woman; if not, they had better make their application elsewhere. She told them she not only expected them to perform their professional duties satisfactorily, but to conduct themselves like gentlemen in the hospital. Surely a very feminine view of the "balance" of power obtains in American hospitals. It is perhaps not surprising that in a meeting composed of matrons the conclusion appears to have been reached that "a good deal of difficulty would be done away with if the matron were really recognised as head of the house."

* * *

The *Medical Press and Circular* contains some nice cool reading for the hot weather on the subject of "Nurses of the Latest Fashion, A.D. 1899," contributed by Mr. Frederick Gant, F.R.C.S., a Consulting Surgeon to the Royal Free Hospital. Type No. 1 is introduced as "Satan in petticoats," *alias* "Nurse Lucretia," a "money-seeking, fortune-hunting woman," who "gains admission to the house of sickness and death simply to play a game best suited to carry out certain diabolical purposes. Nurse Lucretia is of Borgian blood, cold, calculating, cruel. She would vary the depravities of an incestuous nature; she would seduce husband or son, even in the room adjoining the departing spirit of wife and mother." After this we are prepared for anything, so that to read of her "administering slow poison, preferably by (accidental) over-doses of some potent medicine, . . . to gratify the only love she ever feels—her passionate love of money," is a disappointing anticlimax. A female Borgia should be capable of evolving more uncommon and more gruesome crimes than mere criminal poisoning.

* * *

STILL, perhaps the portrait is quite clear-cut enough as it is. To say it is not a true likeness because we hardly recognise it is to pit our limited experience against that of a consulting surgeon, which would be sheer fatuity, of course. If not, we were going to say that so far as *our* observations go,—but there, we are reminded of our youth with its illusions, and so forbear; besides, a consulting surgeon ought to know. Anyway, we shall await "Type No. 2" with anxious interest, though we cannot promise, however strong the language may be, that we and our illusions will be induced to part company: literature of *The Bitterness of Beelzebul* class never did attract us much.

Amalgamated Clubs.

UNITED HOSPITALS ATHLETIC SPORTS.

ST. BART.'S (4 firsts, 3 seconds)	...	1st.
ST. MARY'S (4 firsts, 2 seconds)	...	2nd.

The U.H.A.C. Sports took place on Wednesday, July 12th, at the Stamford Bridge Grounds. St. Bart.'s were successful in regaining the Challenge Shield, which since 1894 has been in other hands. The competition between ourselves and St. Mary's was exceedingly close—the destination of the Shield remaining undecided up to the very last event. In justice to St. Mary's, however, it must be said that they were unfortunate not to win, for their representative in the quarter fell, and they consequently did not obtain their anticipated victory in this race. The whole afternoon the weather was almost perfect, a slight breeze adding to the comfort of the spectators, though interfering perhaps with some of the times.

The attendance was not very different from that of the last few years, if anything there were rather fewer spectators than usual.

The Bart.'s students present numbered perhaps a couple of dozen. However, their enthusiasm largely made up for their fewness, and at times it seemed as though there were more.

100 *Yards.*—C. E. H. Leggatt (St. Mary's), 1; F. W. Sime (Guy's), 2. Won by two yards. Time, 11 sec. We had no representative in the final heat of this race, but Leggatt's win was rather a surprise, and lowered our chances of winning the Shield. A head-wind will account for the poor time.

Half-mile.—H. E. Graham (St. Bart.'s), 1; C. H. R. Coltart (Westminster), 2. Won by four yards. Time, 1 min. 59⅘ sec. A very good race. Graham and Coltart were never far apart, but Graham took the lead half a lap from home, and though Coltart almost got level again at the top of the straight, he could never quite get on terms. The time is a United Hospital record, the previous best being A. G. Butler's 1 min. 59⅘ sec. last year. Graham has since shown that he can do even better by winning the half-mile for Oxford and Cambridge against Harvard and Yale in 1 min. 57⅕ sec.

Putting the Shot.—A. E. Lister (St. Bart.'s), 33 ft. 10 in., 1; R. F. C. Thompson (St. Thomas's), 33 ft. 2 in., 2; G. A. West (St. Bart.'s), 32 ft. 4 in., 3 Lister's win was rather unexpected, but thoroughly deserved.

120 *Yards Hurdles.*—W. M. Fletcher (St. Bart.'s), 1; C. E. H. Leggatt (St. Mary's), 2. Won by five yards. Time, 16⅗ sec.

220 *Yards.*—F. W. Sime (Guy's), 1; T. St. Clair Smith (St. George's), 2. Won by one and a half yards. Time, 24 sec.

High Jump.—C. E. H. Leggatt (St. Mary's), 5 ft. 7¾ in., 1; J. E. Lascelles (St. Mary's), 5 ft. 6¾ in., 2.

Throwing the Hammer.—C. I. Graham (St. Mary's), 99 ft. 11 in., 1; W. M. Fletcher (St. Bart.'s), 97 ft. 4 in., 2; J. A. West (St. Bart.'s), 91 ft. 4 in., 3. Both Graham and Fletcher had been doing well over 100 ft. in practice.

One Mile.—H. E. Graham (St. Bart.'s), 1; E. F. Fisher (London), 2; F. S. Lister (St. Bart.'s), 3. Won by twenty yards. Time, 4 min. 50⅘ sec. The first three laps were run very slowly, and all the men kept pretty well together. Graham took the lead about 200 yards from home, and won very easily.

Long Jump.—C. E. H. Leggatt (St. Mary's), 23 ft. 4½ in., 1; B. N. Ash (St. Bart.'s), 18 ft. 11½ in., 2; S. Pern (St. Thomas's), 18 ft. 6 in., 3. Leggatt's jump was against the wind, and is yet only two inches behind Fry's jump in 1893, of which so much is heard, and which was the British Amateur record until last year. It is, of course, a United Hospital record. Leggatt also jumped 23 ft. 1 in.

440 *Yards.*—T. St. Clair Smith (St. George's), 1; L. D. Bailey (St. George's), 2; T. Bates (St. Bart.'s), 3. Time, 53⅘ sec. J. E. Lascelles (St. Mary's) was looked upon as the probable winner of this event, but he unfortunately fell after running 150 yards. He is certainly capable of doing well inside 53 sec., and his accident probably lost his hospital the shield.

The result of the quarter-mile race left St. Bart.'s and St. Mary's equal, with four wins and two seconds each. The three-mile race alone remained. We had three men entered, and St. Mary's only one. It was soon discovered, however, that the St. Mary's man was a non-starter, consequently if only Bart.'s could secure second place in the three miles they would win the shield, while if they failed to secure a place they and St. Mary's would be joint holders.

The race was run very slowly; one of our men dropped out about halfway, but the other two were always near the front. At the last bend five or six men were still together. In the sprint down the straight Ash (St. Bart.'s) took second place, and succeeded in keeping it to the end, so making St. Bart.'s the winners of the shield for the year.

Three Miles.—A. E. Oakley (Middlesex), 1; B. N. Ash (St. Bart.'s), 2. Won by six yards; eight yards between second and third. Time, 16 min. 55⅘ sec.

The prizes were afterwards presented by Mrs. George Turner, wife of the President of the Club. The latter has very kindly presented a Challenge Cup for the High Jump, for which the thanks of all hospital athletes are due to him.

SHOOTING CLUB.

UNITED HOSPITALS RIFLE ASSOCIATION *v.* HONOURABLE ARTILLERY COMPANY.

Shot at Ilford, June 13th, 1899.

U.H.R.A.

	200 yds.	500 yds.	600 yds.	Total.
Pt. Carpmael (St. Thomas's) ...	33	31	28	92
Corpl. Read (St. Bart.'s)	33	34	25	92
Pt. De Morgan (St. Mary's)	26	29	25	80
Pt. Gandy (St. Bart.'s)	32	25	22	79
Pt. H. C. Brown (St. Bart.'s).....	28	23	19	70
Pt. Weekes (St. Thomas's)	23	22	18	63
			Grand Total ...	476

H.A.C.

Capt. Carpenter	30	30	30	90
Pt. Trask	32	28	33	93
Pt. Blizzard	29	32	30	91
Sergt. Duncan	33	31	26	90
Bomb. Mate.....	30	33	26	89
Staff-Sergt. Kent	25	28	35	88
			Grand Total ...	541
Counted out:				
Pt. Glanville	31	29	23	83
Major Munday	31	28	23	82

The United Hospitals lost by 65 points.

The United Team was two short, so the H.A.C. very courteously agreed to only count the best six scores.

Annual Distribution of Prizes.

THE certificates, medals, books, and other prizes awarded in the various Scholarship and Prize Examinations during the year 1898–9 were distributed by Sir Thomas Smith, Consulting Surgeon to the Hospital, on Thursday, July 20th, in the Great Hall.

The chair was taken by the Treasurer, Sir Trevor Lawrence, who was supported by several members of the Visiting and Teaching Staff. The audience was not smaller than is usually the case upon these occasions.

After a few preliminary remarks by the Treasurer, the Warden read the following report:

"The prosperity of the Medical School during the past year has been in every way fully maintained. The number of students who entered during the year 1898–9 was 189, as compared with 188 the preceding year. Of this number 100 entered for the full course, as compared with 97 in the preceding year. St. Bartholomew's still maintains the lead amongst the metropolitan schools in the number of entries. The total number of students in attendance for the year has been 576.

During the past year no change has taken place in the members of the Hospital Staff. In the Skin Department Dr. Ormerod has replaced Dr. West, and in the Casualty Department Mr. Horder has succeeded Dr. Batten. Dr. Calvert has been appointed Joint Lecturer of Materia Medica, Pharmacology, and Therapeutics.

But we have to mourn the death of our former Lecturer on Pathology—Dr. Kanthack, Professor of Pathology in the University of Cambridge. He died last Christmas-time, a great loss to the scientific world in general, and infinitely regretted by all his friends.

In the Medical School several changes have occurred. Mr. Furnivall resigned his position of Demonstrator of Anatomy on his appointment as Assistant Surgeon to the London Hospital. A many-sided man, he has been in many ways missed in the Hospital. He was not only an admirable teacher, but, an athlete himself, he also took an active interest in all the athletics of the place, and we were very sorry when he left us.

Mr. Phillips has been elected a Demonstrator of Anatomy; Mr.

Mundy, Mr. Rawling, and Mr. Douglas have been elected Assistant Demonstrators of Anatomy.

Mr. Langdon Brown has succeeded Mr. Gladstone Clark as Assistant Demonstrator of Physiology, Mr. Elmslie and Mr. F. N. White have been appointed Assistant Demonstrators of Biology, and Mr. Horne and Mr. F. A. Bainbridge have been elected Assistant Demonstrators of Pathology. Mr. R. C. Bailey has succeeded Mr. Eccles as Demonstrator of Operative Surgery.

It is with very great regret that we have to announce that Mr. James Berry, after so many years of earnest and successful work spent in the service of the Hospital and Medical School, has resigned his position of Demonstrator of Practical Surgery, and he has been succeeded by Mr. H. J. Waring. Mr. Berry's resignation must be regarded as a very great loss to the School.

The Treasurer's research student, Mr. P. J. Cammidge, has been appointed Assistant Demonstrator of Pathology at the Leeds Medical School, thus affording another example of the advantage this studentship gives to our men.

Among the distinctions won by St. Bartholomew's men during the past year, the foremost place must be given to our Senior Physician, Dr. Church, who in March last was elected President of the Royal College of Physicians, the highest distinction a physician can obtain in his profession.

The University of Edinburgh has conferred an Honorary LL.D. on Dr. Lauder Brunton.

The Royal College of Physicians have appointed Dr. Horton-Smith as their Gulstonian Lecturer for next year.

And we had among us during the last few days one who in another way, and in a far distant country, has added himself to the long list of distinguished men whose deeds make up the fame of this Hospital—Lieutenant Hugo, of the Indian Medical Service. In the late Indian frontier war he remained, at imminent risk of his own life, for three hours under fire in attendance on a wounded officer, whom he finally carried off the field into safety; and for this Lieutenant Hugo received the Distinguished Service Order. And it is such things as these which make us proud that we are St. Bartholomew's men.

In examinations the record of the School has been unusually brilliant.

At the University of London eleven men have taken the degree of Doctor of Medicine, Dr. Hussey and Dr. Briggs both obtaining marks qualifying for the gold medal.

Mr. J. S. Sloane has taken the degree of Master of Surgery, Mr. J. P. Maxwell and Mr. J. L. Maxwell the degree of Bachelor of Surgery, the former carrying off the gold medal. Ten men have taken the degree of Bachelor of Medicine, and in the Honours Examination four out of the five gold medals awarded found their way to St. Bartholomew's. Mr. J. P. Maxwell secured the Scholarship and gold medal in Obstetric Medicine—a success accentuated by the fact that now for six years in succession this Scholarship and gold medal has been won by a St. Bartholomew's man.

Mr. T. J. Horder's success was phenomenal. He was awarded a gold medal in Medicine, a gold medal in Obstetric Medicine, and a gold medal in Forensic Medicine—a record almost unequalled in the history of the University.

In the University of Cambridge eight men have taken the degree of Doctor of Medicine, and nineteen have passed the first part and twelve the second part of the final examination for the degree of Bachelor of Medicine.

At the Royal College of Surgeons fourteen men have passed the final examination for the Fellowship.

With regard to the Army and Naval Medical Services, St. Bartholomew's has fully maintained its reputation. Especial mention may be made of Mr. Meakin, who at Netley has been awarded the Montefiore medal and prize for Surgery; of Mr. A. L. Scott, who has won the Parkes Memorial medal in Hygiene; and of Dr. Boyan, who secured the first place in the November examinations for the navy.

In the inter-hospital games we have done very well. Sir Trevor Lawrence has again shown the interest he feels in our students by giving a cup for the St. Bartholomew's man who does best in the inter-hospital athletic sports. It may very well be, therefore, that he is responsible to some extent for the fact that the Inter-Hospital Shield once more adorns the table in the library.

In conclusion, sir, the Medical Officers and Lecturers beg to thank the Treasurer and Governors of the Hospital for the interest they take in the welfare of the Medical School—an interest which, during this past year, has received practical illustration in the re-benching of the Physiological class-room, the improvements made in the Science workroom, and in the fitting up of the new physical laboratory."

Sir Thomas Smith then proceeded to distribute the prizes to the successful students as follows:

Jeaffreson Exhibition ... T. J. Faulder.
Preliminary Scientific Exhibition ... ... A. F. Forster.
Junior Entrance Scholarship in Science... ... ... C. C. Robinson, J. Burfield } Æq.
Senior Entrance Scholarships in Chemistry and Physics Not awarded.
Senior Entrance Scholarships in Biology and Physiology L. J. Picton.
Shuter Scholarship ... H. W. Atkinson.
Junior Scholarships in Anatomy and Biology ... A. Hamilton, T. H. Harker, C. C. Robinson } Æq.
Junior Scholarship in Chemistry and Histology ... 1. E. C. Williams. 2. H. V. Wenham.

Treasurer's Prize—
1. C. C. Robinson.
2. A. Hamilton.
3. J. Burfield.
4. W. S. Aldred.
5. T. W. Chaff.
6. J. W. Cleveland.
7. A. J. Forster.
8. T. H. Harker.
9. H. V. Wenham.

Senior Scholarship in Anatomy, Physiology, and Chemistry... ... ... F. Gröne.

Foster Prize—
1. N. E. Wakefield.
2. W. P. Yetts.
3. H.E.StangerLeathes.
4. H. R. Kidner.
5. J. Corbin, F. H. Noke.
7. T. C. Neville.
8. E. B. Smith.

Harvey Prize ... ... N. E. Waterfield.
Prox. acc. ... ... H. R. Kidner.
Wix Prize ... ... E. C. Williams.
Hichens Prize ... ... S. G. Mostyn.
Kirkes Scholarship and Gold Medal ... ... C. J. Thomas.
Bentley Prize (Surgical) ... Not awarded.
Brackenbury Medical Scholarship ... ... C. J. Thomas.
Brackenbury Surgical Scholarship ... ... F. C. Borrow.
Matthews Duncan Medal and Prize ... ... C. J. Thomas (prize).
Sir George Burrows Prize... G. V. Bull.
Skynner Prize ... ... H. Davies.
Lawrence Scholarship and Gold Medal ... ... Not awarded.

After a short speech from Sir Thomas Smith congratulating the successful students in that happy vein peculiar to our esteemed Consulting Surgeon, a vote of thanks was proposed to Sir Thomas by Dr. Church, and to the Chairman by Mr. Langton.

The proceedings then terminated.

John Wesley as a Physician.

A FRIEND of mine a few days since lent me a copy of the twentieth edition of *Primative Physic, or an Easy and Natural Method of Curing most Diseases*, by John Wesley, M.A. Printed by J. Parramore, Moorfields, and sold at the Rev. Mr. Wesley's new Chapel in the City Road, and at all his preaching houses in town and country (20th Edition, 8vo, 1781).

The perusal of this work leads one to fear that the eminent divine would have laid himself open in the present day to condemnation for wholesale quackery, and his experiments in the region of medicine would have damaged his reputation as a representative of the Nonconformist conscience.

That Wesley showed caution in dealing with some drugs appears from his postscript to the edition of his book dated 1755. He says: "It is because they are not safe, but extremely dangerous, that I omitted (together with antimony) the four Herculean drugs, opium, bark, steel, and most of the preparations of quicksilver, except in a very few cases. . . . Instead of these I have ventured to recommend to men of unbiassed reason such remedies as air, water, milk, honey,

treacle, salt, vinegar, and common English herbs. . . . And this I have done on principle, whereby I desire to be governed in my actions, 'Whatsoever ye would that men should do unto you, the same do unto them.'"

If by this quotation the good man wished it to be understood that he would have submitted in his turn to some of the treatments he advocates below, we should assign to him a foremost place among our English heroes.

Let us glance in passing at his ætiology. He says, "The passions have a greater influence on health than most people are aware of. All violent and sudden passions dispose to, or actually throw people into, acute diseases. The slow and lasting passions, such as grief and hopeless love, bring on chronic diseases."

His nomenclature of disease is hardly that adopted now-a-days by the Royal College of Physicians. Here are a few specimens:

A sanguinious apoplexy.	A rash fever.
A serous apoplexy.	A worm fever.
Canine appetite.	Flegm.
Baldness.	Stoppage in the head.
Chops in women's nipples.	The iliac passion.
Bilious cholic.	Lethargy.
An habitual cholic.	Old age.
Convulsions of the bowels.	To one poisoned.
Eyes bleared.	Coldness of the stomach.

The following are a few of the choicest from among his collection of recipes:

3. *A Tertian ague.*—Apply to each wrist a plaster of treacle and soot. To use the cold bath, going in cool, immerge at once, but not head foremost.

5. *A Quartan ague.*—Apply to the suture of the head, when the fit is coming, wall July flowers, beating together leaves and flowers with a little salt.

7. *The apoplexy.*—In the fit put a handful of salt into a pint of cold water, and, if possible, pour down the throat of the patient. Let two strong men carry patient upright, backwards and forwards about the room.

8. *Canine appetite, or insatiable desire of eating.*—If without vomiting is often cured by a small piece of bread and wine applied to the nostrils.

9. *The asthma.*—Live on boiled carrots only for a fortnight. This seldom fails.

11. *To cure baldness.*—Rub the part morning and evening with onions till it is red, afterwards rub with honey.

12. *Bleeding at the nose.*—In a violent case go into a pond or river. (Tried.)

26. *A cancer of the breast.*—A bleeding cancer was cured by drinking twice a day a quarter of a pint of the juice of goose-grass, and covering the wounds with its leaves. Or, take horse spurs (viz. the warty growth on the inside of horses' fore-legs), beat to powder. Infuse two drachms in two quarts of ale and drink half a pint every six hours, new milk warm. It has cured many. (Tried.) Or, apply goose dung and celandine beat together and spread on rag. A cancer under the eye was cured by drinking tar water, and applying a plaster of tar and mutton fat.

42. *Bilious colic.*—Give a spoonful of sweet oil every hour.

47. *Windy colic.*—Parched peas eaten freely have had the most happy effect when all other means have failed.

49. *A consumption.*—Every morning cut up a little turf of fresh earth, and lying down breathe into the hole for a quarter of an hour. I have known a deep consumption cured thus. Mr. Masters, of Evesham, was so far gone in consumption that he could not stand alone. I advised him to lose six ounces of blood every day for a fortnight if he lived so long, and then every other day, then every third day, then every fifth day for the same time. In three months he was well (Dr. Dover).—Tried. In the last stage suck a healthy woman daily. (Tried by my father.)

55. *Costiveness.*—Breakfast twice a week on water-gruel and currants.

74. *The dropsy.*—Mix half an ounce of amber with a quart of white vinegar. Heat a brick (only not red-hot) and put into a tub. Pour them upon it and hold the parts swelled over the smoke. The water will come out incredibly. (Tried.)

94. *White specks in the eye.*—On going to bed put a little ear-wax on the speck. This has cured many.

102. *The falling of the fundament.*—Apply a cloth covered thick with brick-dust.

105. *A fever.*—Smear the wrists five or six inches long with treacle, and cover it with brown paper; or apply treacle plasters to the head and soles of the feet.

117. *A bloody flux.*—Take a large apple, and at the top pick out all the core and fill up the place with a piece of honeycomb (the honey being strained out); toast the apple in embers and eat it, and this will stop the flux immediately.

135. *Hoarseness.*—Rub the soles of the feet before the fire with garlic and lard well beaten together overnight. The hoarseness will be gone in the morning.

136. *Hypochondriac or hysterical disorder.*—Take an ounce of quicksilver every morning, and fifteen drops of elixir of vitriol in the afternoon.

139. *The iliac passion.*—Hold a live puppy constantly on the belly (Dr. Sydenham).

150. *Lues venerea.*—Take an ounce of quicksilver every morning and a spoonful of aqua sulphurata in a glass of water at five in the afternoon. I have known a person cured of this when supposed to be at the point of death, who had been infected by a foul nurse before she was a year old. I insert this for the sake of such innocent sufferers.

151. *Lunacy.*—Give decoction of agrimony four times a day.

152. *Raging madness.*—Let them eat nothing but apples for a month.

154. *The measles.*—Immediately consult an honest physician.

177. *The pleurisy.*—Take half a drachm of soot.

189 *Ring-worms* (vulgarly called tetters).—Apply rotten apples or pounded garlic.

191. *A rupture.*—Take agrimony, springwort, Solomon's seal, and strawberry root (a handful of each); boil two hours in two quarts white wine; strain, and drink a large glass every morning. It commonly cures in a fortnight. A good truss, meantime, is of great use.

192. *A rupture in children.*—Boil a spoonful of egg-shells dried in an oven and powdered in a pint of milk. Feed the child constantly with bread boiled in the milk.

193. *A windy rupture.*—Warm cow-dung well; spread thick on leather, strewing some cummin seeds on it, and apply hot.

220. *A stitch in the side.*—Apply hot treacle on a hot toast. (Tried.)

226. *Stone* (*to prevent*).—Eat a crust of dry bread every morning. (Tried.)

260. *Bite of a viper.*—Rub the place immediately with common oil. *Quere*—Would not the same cure the bite of a mad dog? Would it not be worth while to make a trial on a dog?

281. *The whites.*—Live chastely, feed sparingly, sleep moderately, but not lying on the back.

284. *Flat worms.*—Take filings of tin and red coral equal parts; pound together into a fine powder, 1 drachm of which make into a bolus with conserve of the tops of sea wormwood. To be taken twice a day.

Cold bathing cures coughs, gravel, inflammation of ears, navel, and mouth, asthma, blindness, cancer, chin cough, gout, incubus, surfeits (at the beginning), stone in the kidneys, St. Vitus's dance.

Electrifying cures St. Anthony's fire, feet violently disordered, lameness, ophthalmia, shingles, toothache, and wens.

Fasting spittle, outwardly applied each morning, has sometimes relieved and sometimes cured blindness, corns (when mixed with chewed bread and applied each morning), deafness, scorbutic tetters, sore legs, warts. Taken inwardly, it relieves or cures asthma, cancers, gout, gravel, leprosy, palsy, rheumatism, stone, swelled liver. The best way is to eat about an ounce of hard bread or biscuit every morning, fasting two or three hours after. This should be done in stubborn cases for a month or six weeks.

⁂ I advise all in or near London to buy their medicines at the Apothecaries' Hall; they are sure to have them good.

It is plain, judging from the foregoing extracts, that the author had quite as much courage of his convictions medical as we know he had of his convictions religious; for although the word "tried" is appended to but few of the treatments recommended, he shows no hesitation in prescribing the most astounding remedies in his book.

But what are we to say at finding John Wesley among the vivisectors—among those who "wantonly inflict suffering upon dumb animals," as evinced by his suggestion that a dog might be exposed to the bite of a mad brother in order that a certain cure might be tried? Lord Coleridge and Miss Cobbe would, I fear, had they lived in his day, have pilloried him.

I regret that space forbids my including any more pharmaceutical gems from this book. I feel that any student who reads the work from start to finish will experience a regret that the *materia medica* of Wesley's day is not of his own. It would be so much more easy to remember the cure prescribed by Wesley for dropsy than to commit to memory the intricacies of, say, the serum therapy of to-day, or even the formula of our old familiar Tinct. Camph. Co. C. W. E.

The Country Doctor.

Air, "Soldier an' Sailor too."

(With apologies to Mr. RUDYARD KIPLING.)

AS I was a-goin' 'ome to bed, through a muddy country lane,
I seen a man in a oilskin cape, a-trudgin' through the rain,
'E 'adn't a match, an' 'is pipe was out, an' I ses to 'im,
"Oo are you?"
An' 'e ses, "I'm a doctor, the country doctor, surgeon an' midwife too!"
Now 'e never gets paid for 'arf 'e does, an' 'e does the work of two,
An' 'e isn't one of the gentlefolks, 'an 'e ain't like me nor you,
'E's a sort of a bloomin' chameleotype, surgeon an' midwife too.

An' I seen 'im again all over the shop, a-playin' all sorts of rags,
Like settin' a fractured collar-bone with a couple of touch-line flags,
An' the parsons owe 'im money, for their wives give 'im work to do,
Though 'e's only the doctor, the country doctor, surgeon an' midwife too.
An' the Poor Law Board they sits on 'im, an' tries to dock 'is screw,
Though 'e 'as 'is bread and cheese to git the same as me or you,
They think 'e's a 'aughty philanthocrat, surgeon an' midwife too.

An' I seen 'im again with a knife an' things, an' the sweat was on 'is brow,
'E was trying to mend the guts of a bloke as 'ad spiked 'isself in a row;
'Twas late at night an' 'e 'adn't no light, to see what 'e 'ad to do,
An' 'is pal was a doctor, a country doctor, surgeon an' midwife too.
'E 'adn't got far with 'is little job, 'e wasn't but 'alfway through,
When the bloke sits up an' asks for a drink, the same as it might be you;
Ho! they ain't no special anæsthetutes, surgeon an' midwife too.

But there wasn't a call to do as you done when you 'ad the gout in yer toe,
An' you fetched him out in the dead of night, an' 'e 'ad six miles to go,
For you've had it before, and you'll 'ave it again, and you know just what to do.
You don't want the pore old country "doc," dispenser an' staff nurse, too.
You pays 'im? What? Yes, tuppence a week, an' you're earnin' "thirty-two."
'An 'e 'as to subscribe to your football club, which you're too mean to do,
Because 'e's the doctor, the country doctor, surgeon an' midwife too.

Now I never believes in them specialist thieves, what stammer, and grunt, an' blow,
As 'll watch yer die with a winkin' eye for a 'undred pound or so;
An' when it's "Checks!" an' "Oose turn nex'?" which I 'opes it won't be you!
Let's stick to the doctor, the country doctor, surgeon an' midwife too.
An' when you come to the Bar of Gawd, an' 'E says "Oo passed you through?"
(For 'e 'ates Peculiar People an' the Christian Science crew,)
Just mention the doctor, the country doctor, surgeon an' midwife too.

E. G. B. A.

Reviews.

A MANUAL OF SURGICAL TREATMENT in six parts, by Prof. WATSON CHEYNE and F. F. BURGHARD, F.R.C.S. (Messrs. Longmans, Green & Co., 1899, price 10s. 6d.)

The authors propose in this work to deal especially with the treatment of disease, and they assume that the reader is familiar to a large extent with diagnosis and pathology. In this, the introductory volume, dealing with general subjects, such as inflammation, suppuration, and so forth, it is clearly very difficult to discuss treatment in any but general terms. Thus, to mention that acute inflammation may be treated locally by bloodletting, heat, cold, or free incisions will not help the student much, but, at any rate, will not lead him far astray. But in dealing with chronic inflammation the authors are more explicit, and in one passage advise the use of the actual cautery for certain cases of hip disease with starting pains. It is easy with a white-hot cautery to burn one sore in front and another behind such a joint, but until the posterior sore was healed we can imagine that the sufferer would prefer the starting pains, and would regard a lengthy course of savin ointment with distrust. We hope that the reader will try the effect of a weight extension before proceeding to the use of the cautery.

If it is assumed that the practitioner is familiar with the diagnosis and pathology of various diseases, it does not seem too much to assume that he is conversant with the microscopical phenomena of inflammation, and could dispense with the well-worn definition. The treatment of ulceration is described at considerable length, and is well worth reading, while the classification of the varieties of gangrene is also very good, although the description of Raynaud's disease is meagre and inaccurate; the statement that it is most probably connected with uterine disorders hardly accounting for the male cases.

In the chapter on the treatment of wounds the authors are seen at their best, though to describe five methods of healing is unnecessary, for healing by blood-clot and under a scab are surely only varieties of healing by first intention. We cannot agree with the proposed treatment of burns of the third and fourth degree. In bad cases, to give a general anæsthetic while the burnt area is cleansed with a strong solution of carbolic acid and sublimate, would add greatly to the shock so constantly present, and in the case of children would convert many dangerous into rapidly fatal cases.

There are many points of less importance with which we disagree, some of them occurring in an otherwise excellent article. We venture to recall a few of them. Slapping the face with a cold wet towel after a cleft palate operation seems as likely to excite hæmorrhage as to arrest it, and in the case of a harelip the method would require previous practice on the part of the medical attendant.

In the chapter on tetanus we think that the prognosis of the chronic variety, 20 per cent. recoveries, is far too gloomy; one of the causes of death mentioned has, at any rate, the charm of novelty—we refer to pressure of the trachea on the spine in bad cases of opisthotonos.

Dr. Frederick Silk contributes a chapter on *Anæsthetics*, which treats briefly of the various modes of administration, the complications which may arise, and the treatment of these complications. Under the heading of the administration of ether there is no mention of the length of time during which that narcotic should be used. We think this a most important omission. It is a usual custom at this hospital never to continue the use of this drug for more than about half an hour, and in our opinion it is owing to the abuse of this rule that ether fatalities and complications such as collapse arise. After the half-hour chloroform is used if the period of anæsthesia is to be lengthened. We disagree also with the objection to the use of lint in chloroform anæsthesia. If properly used the lint should not, and does not, get sodden.

The combination of gas and ether is thought only worthy of small print, but it gives the best of results, getting the patient quickly and easily under the anæsthetic.

The chapter on syphilis is short but to the point. We quite agree as to the inutility of excising the "primary sore." Smokers will not like the "dictum" that owing to the various affections of the throat, tongue, and mouth, this habit must be abstained from. It is a point which is frequently forgotten but of great importance, both on account of the local irritation and of the frequent source of infection which the pipe after contact with condylomata must be. In "chancroid," considering the admirable results of the more simple treatment, it does not seem necessary to resort to fuming nitric acid except in cases of phagedæna. The use of iodoform, recommended by the authors for venereal sores, is to be strongly deprecated. You may as well write "syphilis" on a man's back as apply iodoform to his sores. There are other odourless but equally good antiseptic powders.

In those cases where phimosis is marked and the prepuce œdematous, it is better to perform circumcision than to slit the prepuce as recommended. Such half-measures lead to much discomfort and pain during the frequent dressings which are necessary, and are certainly not so efficacious as the more complete operation. Thorough use of antiseptics will minimise any risk of infection through the raw surface.

Stress is laid on the necessity of very thorough treatment of in-

fected inguinal glands which are breaking down. Excision of the whole mass is advocated. We doubt, however, if many patients would consent to this. The same objection applies to the treatment of chronic subcutaneous tubercular abscesses, where not only is it considered necessary to excise the particular gland or glands affected, but all the neighbouring glands, all sinuses, and all adherent skin. The excision of the sinuses especially must be a tedious and lengthy operation, and unnecessary when we consider the excellent results produced by scraping and swabbing out with pure carbolic acid.

The treatment of *abscess in Pott's disease* by incision, evacuation, injection of iodoform emulsion and sewing up is strongly recommended. We have seen several successful cases, and even though failure is by no means uncommon we shall certainly try a second, and, if necessary, a third time, as is urged by the authors.

The chapter on *Tumours* tells us nothing new. However, it is obviously quite impossible to treat this subject thoroughly in such a work as this.

Nævus, on the other hand, is very carefully gone into, and the account is well worthy of careful study.

Cysts are merely touched upon, but we hope to meet with them again in another volume.

Looking at the book as a whole, we think that, excellent as it is, it cannot become very popular. The authors admit in their preface that nothing can replace experience, and we think that if treatment must be learnt from a text-book it will be far more easily remembered if, at the same time, the student is furnished with a short account of the pathology and symptoms of the disease in question.

The printing and binding of the book are good.

THE ELEMENTS OF VITAL STATISTICS, by ARTHUR NEWSHOLME, M.D.Lond., F.R.C.P. (Messrs. Swan Sonnenschein & Co. Third edition. Price 7s. 6d. net.)

Dr. Newsholme has presented us with by far the most complete and explicit account of the methods of vital statistics we have hitherto met with. Not only does he give us the history of the various methods of obtaining data in connection with human statistics, but he supplies excellent criticism as well, and collects an enormous mass of information with regard to important details that will prove of great value for reference. Above all, Dr. Newsholme has given us a text-book on the subject which will render the task of the student a matter of much greater facility than before.

The work is so complete, and the ground covered is so extensive, that we give a short *résumé* of the most important subjects dealt with. The first chapter deals with the methods of estimating population, detailing the various sources of error from ignorance, female caprice, and other causes, and placing the mathematics of the subject before the student in a manner which he cannot fail to comprehend. In this chapter, as in the succeeding one, the graphic charts employed are most carefully executed, and show at a glance the various ratios they are designed to depict. We cannot too emphatically recommend the careful study of charts of this kind, as the curves present a picture which is far more readily impressed upon the mind than mere tables of figures or other data.

Then follow accounts of the various methods of registration, classification of causes of death, &c. The chapters on marriage, birth, and death rates are very complete, but what appeals to us as being perhaps the best chapter in the book is that on corrected death rates. In our experience there has often been a considerable difficulty among students for the Public Health Examination in grasping precisely what effect age and sex distribution have upon a local death rate; this chapter deals most fully with the subject, and leaves the reader with as clear a knowledge of the necessary corrections and their application as could be desired.

The chapters on the relation of male and female mortality, and on infantile mortality, are no less excellent, and we recommend the student to a careful study of the mistakes which are often made of arranging the death rate of two or more localities on their individual death rates instead of on the total deaths per total population.

The reservation of an entire chapter to the consideration of "statistical fallacies" strikes the reader, at the first glance, as being somewhat strange. But the opportunity of quoting Quetelet's four chief rules for the proper employment of figures, and the exposure of errors following their infringement, quite justifies the author.

In conclusion we again repeat our recommendation of the book to all students of this increasingly important subject.

HYGIENE AND PUBLIC HEALTH. By ARTHUR WHITELEGGE, M.D., B.Sc.Lond., F.R.C.P. (Messrs. Cassell & Co. Revised edition. Price 7s. 6d.)

A revision of this excellent little manual gives us a concise account of the subject that will probably maintain the previous reputation of the work. We note on p. 319 that the anaërobic *Bacillus enteritidis sporogenes* (Klein) is mentioned as "associated with localised epidemics of diarrhœa due to milk, with summer diarrhœa, and with English cholera," though the word "associated," we presume, is used to avoid any statement as to causal relations. An appendix is added, dealing with Dr. Klein's investigations upon oyster infection by sewage. We fail to find any reference to the notification of cases of lead, phosphorus, arsenic, and mercury poisoning. We thoroughly recommend the book to students.

Correspondence.

To the Editor of the St. Bartholomew's Hospital Journal.

DEAR SIR,—Dr. Gee, in the very useful clinical lecture published in your last issue, made a statement which very considerably interested me, viz. "round and tape worms are also uncommon, at least in England."

My experience is in accord with Dr. Gee's with respect to tape-worms, but with respect to round-worms, however true his statement may be for other parts of the country, it does not apply to this neighbourhood. During two and a half years my experience has been that in children from two to fourteen years they are very common. I am somewhat at a loss to account for this.

The water-supply for the surrounding district is almost entirely obtained from wells which are unprotected from contamination by surface water, and I suspect that the ova are conveyed in this manner to the wells, and so to the children.

Although round-worms are very common in this district, convulsions in children due to irritation produced by them are certainly rare, although I have met with one or two such cases.

I am, sir, yours truly,
JOHN CURRIE.

Coleford, Gloucestershire.

[Dr. Currie's experience quite confirms, and is not at variance with, Dr. Gee's,—that "young children, *under two years*, are not very liable to worms." Dr. Currie seems to have overlooked the words we have italicised.—ED.]

To the Editor of the St. Bartholomew's Hospital Journal.

SIR,—I have just read with much interest your editorial in the JOURNAL of May, 1899, discussing the advantages of young medical men entering the Royal Army Medical Corps.

Permit me to say that I agree thoroughly with you in the suggestions put forward in the editorial as to the probable cause of the want of status of officers of the R.A.M.C.

I was for six months a contract surgeon attached to the R.A.M.C. During that time I was attached to four different regiments, and in all of them I was treated with unvarying courtesy by my brother officers. I had a most enjoyable time, and I was sufficiently well paid. My objection to the R.A.M.C. is that there is too little work, but this is not likely to be an insuperable objection to most people. In addition there is no scope for initiative, but this again very much narrows the area of responsibility.

Of course everybody grumbles, but I remember that even when I was House Surgeon at Bart.'s I heard an occasional growl.—

Sincerely yours,
JOHN J. GRACE.

Hilo, Hawaii; *July 11th*, 1899.

Examinations.

UNIVERSITY OF LONDON.

Intermediate M.B.: Entire Examination.

Honours Examination.—Elmslie, R. C., obtained Second Class Honours in Anatomy, First Class with Exhibition and Gold Medal in Organic Chemistry, and First Class in Materia Medica and Pharmaceutical Chemistry. Young, E. E., obtained Second Class in Materia Medica and Pharmaceutical Chemistry.

First Division.—Noke, F. H.
Second Division.—Martin, E. L., Ward, V. G., Waterfield, V. E.
Physiology only.—Amsler, A. U., Harvey, P. G., Raw, H. H.

Preliminary Scientific Examination: Entire Examination.

First Division.—Maples, E. E., Finzel, H., Pickering, W. C.
Chemistry and Physics.—Travers, E. F.
Biology.—Charles, C. P., Godsell, T. W., McHänschell, H., Moss, B. E., Powell, N. B., Wilson, H. W.

Intermediate Science and Preliminary Scientific conjointly.

Zoology.—Gauvain, H. J.

CONJOINT BOARD.

Final Examination for M.R.C.S., L.R.C.P.

The following have completed the examinations:—Slater, A. B., Woodpill, H. G., Bull, G. V., Fletcher, A. J. M. Cudden, Hayes, A. H., Thornley, R. H., Bainbridge, F. H., Curl, S. W., Mayo, H. R., Greaves, H. S., O'Hea, J., Croft-Hill, A., Brewer, A. H., Hartley, J. D., Thomas, H. S., Danks, W. S., Frost, C. S., Bell, V. S. H., Andrew, A. J., Pentreath, H. M., Scholberg, P. H., Thompson, A., Bailey, B. E. G., Scott, S. R., Bennett, W. F.

Practical Pharmacy.—Williams, A. S., Acres, G. C. J., Ainger, W. B., Arnould, L. A., Aubrey, G. E., Corbin, J., Couldrey, T. R., Hallowes, A., Hodgson, E. C., Ingonville, J. G., Kingston, C. S., Leonard, N., Miller, G. W., Nicholas, C. F., Plews, J. M., Salt, A. P., Speechly, A. J. L., Square, W. R., Tosswill, L. R., Turnley, J. E. L. A., Wilson, N. M., Payne, E. M. B. (Materia Medica, old regulations).

Chemistry.—Aldred, W. A., Ash, B. N., Bell, J. H., Bell, K. D., Douglas, R. J., Drury, G. D., Edmond, W. S., Giragosian, V. H. J., Gray, H., Gribbon, E. A., Haggard, T. B. A., Lathbury, E. B., Whitehead, F. E., Wade, A. R., Thurston, L. V., Payne, E. M. B. (old regulations).

Elementary Biology.—Binns, J. B., Thomas, H. E., de Morini, J. L. K., Fernie, C. H., Gray, L., Smith, J. E.

Indian Medical Service.

Browse, G., 8th, 2542 marks; Matthews, E. A. C., 9th, 2947 marks; Beit, F. V. O., 16th, 2172 marks; Long, W. C., 18th, 2085 marks.

Royal Army Medical Corps.

Richards, F. G., 5th, 2150 marks; Harvey, F., 8th, 2102 marks.

Appointments.

BERRY, James, B.S., F.R.C.S., has been appointed Surgeon to the North London Hospital for Consumption and Diseases of the Chest, *vice* W. Watson Cheyne, resigned.

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BEST, F. H. de Graves, M.R.C.S., L.R.C.P., appointed Public Vaccinator for the Cheshunt district of Edmonton Union.

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CAMMIDGE, P. J., M.R.C.S., L.R.C.P., late Treasurer's Research Student in Pathology and Bacteriology, appointed Assistant Demonstrator of Pathology, Leeds Medical School (Victoria University).

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COLES, Charles, M.D.(Lond.), Medical and State Med., has been appointed Medical Officer of Health to the Leicestershire and Rutland Combined Districts.

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FREEMAN, W. T., M.D.(Durh.), F.R.C.S.(Eng.), has been appointed Surgeon in charge of the Department for Diseases of the Skin at the Reading Dispensary.

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HALL, Arthur J., B.A., M.B.(Cantab.), M.R.C.P., appointed Professor of Pathology in University College, Sheffield, *vice* Dr. Duncan Burgess, appointed Lecturer in Medicine.

HATFIELD, R., M.B.(Lond.), M.R.C.S., L.R.C.P., appointed Senior Resident Medical Officer at the Bradford Workhouse Infirmary.

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HORDER, Thomas J., M.B., B.Sc., M.R.C.P., appointed Physician to Out-patients to the Great Northern Central Hospital.

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HORNE, Jobson, M.B., B.C.(Cantab.), appointed Honorary Surgeon to the Metropolitan Ear, Nose, and Throat Hospital.

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JESSOP, W. H. H., M.B.(Camb.), F.R.C.S.(Eng.), has been appointed the Honorary Surgeon-Oculist of the Royal Masonic Institution for Girls, London.

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KNIGHT, Henry Ernest, M.D.(Lond.), M.R.C.S., L.R.C.P., appointed Honorary Surgeon to the Rotherham Hospital.

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PATON, E. Percy, M.S., F.R.C.S., has been appointed Assistant Surgeon to the Westminster Hospital.

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SKELDING, Henry, M.B., B.C.(Cantab.), M.R.C.S., L.S.A., appointed Assistant Surgeon to the Bedford County Hospital.

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THOMPSON, H., M.R.C.S., L.R.C.P., appointed Assistant House Surgeon to the Derby Royal Infirmary.

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WINKFIELD, C. F., M.R.C.S., L.R.C.P., appointed House Physician to the Radcliffe Infirmary.

Births.

DAY.—On July 19th, at Surrey Street, Norwich, the wife of Donald D. Day, F.R.C.S., of a son.

EDELSTEN.—July 29th, at 370, Brixton Road, S.W., the wife of Ernest A. Edelsten, M.A., M.B.(Oxon.), of a daughter.

HUXLEY.—On August 6th, at 39, Leinster Gardens, W., the wife of Henry Huxley, of a son.

NEWINGTON.—On June 6th, at The Grange, Edenbridge, the wife of C. W. H. Newington, M.R.C.S., L.R.C.P., of a son.

ROGERS-TILLSTONE.—On July 10th, at East Malling, Kent, the wife of J. M. Rogers-Tillstone, M.R.C.S., L.R.C.P.(Lond.), of a daughter.

Marriages.

BEST—MORE.—On June 9th, at Holy Trinity Church, Rothwell, Northants, by the Rev. W. S. Parker, assisted by Rev. R. H. B. Crosthwaite, Frederick Henry de Graves Best, M.R.C.S., L.R.C.P., eldest son of F. A. Best, M.R.C.S., L.S.A., of Torquay, to Elizabeth Beatrice Williamson (Bessie), only daughter of James More, M.D., of Rothwell.

MARSH—DALRYMPLE-HAY.—On the 18th July, at St. Saviour's, St. George's Square, by the Rev. Edwin Price, M.A., Vicar of Bishop Auckland, uncle of the bride, assisted by the Rev. H. Washington, M.A., Vicar, Howard Marsh, of 30, Bruton Street, W., to Violet, daughter of Admiral Sir John Dalrymple-Hay, Bart.

WYLLYS—EVERINGTON.—On the 30th July, at the parish church Castleacre, by the Rev. Romaine Harvey, of Birstall, Yorkshire, assisted by the Rev. J. T. Powell, Vicar of the parish, William, eldest son of William Edward Wyllys, of Great Yarmouth, to May Edwards, youngest daughter of William Devas Everington, of Castleacre, Norfolk.